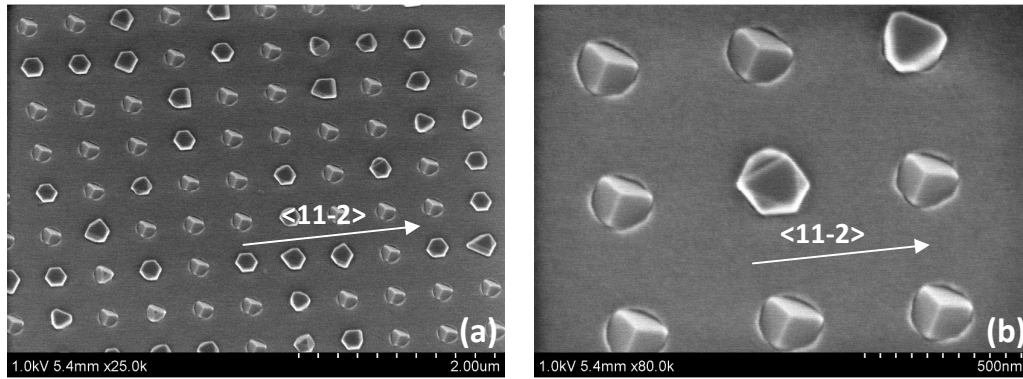


Supplementary Information



Arsine = 0.25 sccm, TMGa = 2.4 sccm; V/III = 2

SEM images of SAG on round opening holes with twin-free nanosheet growth condition. (a) Most depositions are in tetrahedra structure with $\{110\}$ surfaces whose long axes are aligned along the $\langle 11\bar{2} \rangle$ direction. Some depositions are in hexagonal shape. (b) $\langle \bar{1}\bar{1}2 \rangle$ tetrahedra nuclei on the plateau area changes the shape of tetrahedra structure into hexagonal shape.